SUPERFUND PRELIMINARY CLOSE-OUT REPORT

SYNCON RESINS SUPERFUND SITE

KEARNY, HUDSON COUNTY

NEW JERSEY

September 2019

Prepared by:

U.S. Environmental Protection Agency

Region 2

New York, New York

Approved by:

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I. INTRODUCTION

The U.S. Environmental Protection Agency (EPA) has determined that all remedial construction activities at the Syncon Resins Superfund Site (Site) have been completed in accordance with EPA's *Close-Out Procedures for National Priorities List Sites* (OSWER Directive 9320.2-09A-P, January 2000). Two Records of Decision (RODs) and a ROD Amendment have been issued for this Site.

The Site has been divided into two Operable Units (OUs). The New Jersey Department of Environmental Protection (NJDEP) commenced remedial actions activities for OU1 on May 2, 1990 and declared final construction completion on February 28, 1993. OU1 addresses groundwater contamination. NJDEP is currently conducting operation and maintenance activities at the Site. This report describes the completion of OU2 remedial action construction activities. OU2 addresses excavation of soils exceeding remediation goals (RGs) to a depth of about 12.5 feet.

EPA and the NJDEP have determined that all construction work for the buildings and the soils have been completed as of October 31, 2018. The OU2 construction was performed in accordance with the 2010 OU2 ROD amendment, as well as the approved revised remedial design plans and specifications dated January 15, 2016.

II. SUMMARY OF SITE CONDITIONS

Background

The Syncon Resins Site encompasses approximately 15 acres and is located in a heavily industrialized area of northern New Jersey. The Site is located at 77 Jacobus Avenue in Kearny, Hudson County, New Jersey. The Site is bounded on its western edge by the Passaic River. Adjacent to the northern and southern boundaries are facilities of two licensed waste haulers. The Site is bounded on the eastern side by Jacobus Avenue and is across the street from a former lacquer manufacturing facility. The closest residential areas to the Site are located approximately one mile west in Newark and one and one-half miles southeast in Jersey City.

The Site is situated on a narrow peninsula of land bordered by the Passaic River and the Hackensack River, whose confluence of one and one-half miles south of the Site forms the upper reaches of Newark Bay. The Site is relatively flat with minor topographic variations. Most of the company's business consisted of reprocessing of off-specification resins purchased from other manufacturers. Six main buildings and seven ancillary structures were used in process-related activities at the Site. There were at least two chemical reactor buildings containing stainless steel vessels, various other buildings and structures, numerous large bulk storage tanks, two unlined lagoons that had been used for discharging process wastewater, and a number of underground tanks and associated piping systems.

At the Site, the slurry wall constructed as part of OU1 impedes the normal westward groundwater flow in the upper zone toward the Passaic River. This causes groundwater to mound in the middle of the Site.

A groundwater flow divide in the upper zone trends roughly north/south through the Site. West of the divide, groundwater flow in the upper zone is to the west, toward the trench just east of the slurry wall and the Passaic River. East of the divide, groundwater flow in the upper zone is toward the storm sewer running north/south along Central Avenue.

In May 1977, the owners of Syncon Resins filed for bankruptcy under Chapter 11 of the United States Bankruptcy Code. In November 1981, NJDEP investigated the Site and ordered its owners to control and contain the hazardous material at the Site. The company ceased all operations in 1982. In 1982, a limited Site investigation was conducted by NJDEP and EPA which identified widespread soil and groundwater contamination. On September 8, 1983, Syncon Resins was placed on the National Priorities List of Superfund Sites.

OU1 - Remedial Construction Activities

In 1984, a total of 12,824 55-gallon drums of off-specification resins, raw materials, wastes and solvents stored at various locations on the Site were removed from the Site by NJDEP.

Following the remedial investigation, a Focused Feasibility Study (FFS) was completed in 1986. Based on the findings of the FFS, a ROD for OU1 was issued by EPA on September 29, 1986. The interim remedy selected in the ROD included:

- removal and disposal of the contents of storage tanks and vessels, lagoon liquids and sediments, and grossly contaminated surface soils;
- decontamination of buildings and tank structures;
- installation of cover material over the Site to allow for natural flushing of underlying soil and groundwater contaminants;
- and construction of a collection and treatment system for contaminated groundwater from the shallow aquifer, with discharge of the treated groundwater to the Passaic River.

The ROD also called for supplemental studies to evaluate methods to enhance the effectiveness of flushing and/or treatment of the contaminated soil. Subsequent to the OU1 ROD, a Remedial Design (RD) was completed by NJDEP in 1988 for Site remediation. The Remedial Action (RA) for OU1 was undertaken at the Site from May 1990 to December 1993. The OU1 remedy included installation of a collection trench and a slurry wall, construction of a contaminated groundwater treatment system (CWTS), installation of a gravel cover over the Site to allow natural flushing of underlying soil, hot spot soil excavation, sediment excavation at the two former lagoons, and closure of all underground storage tanks (USTs) and aboveground storage tanks (ASTs).

The following remedial objectives were established for the Site:

- Develop mitigative measures to prevent exposure of humans to organic and metal contaminants within the unsaturated soil, lagoon sediments, and building dirt/dust through direct contact and ingestion exposure routes;
- Implement mitigative measures to eliminate the potential hazard to exposed populations caused by the asbestos material covering the on-site tanks and vessels and the chemical materials remaining within them;

- Implement mitigative measures to remediate the contaminated groundwater within the shallow aquifer to levels identified in the following guidance documents;
  - Groundwater criteria for Class GW3 aquifers (N.J.A.C.7:9-6);
  - NJPDES effluent limitations for discharge into the Passaic River (N.J.A.C. 7:9-5); and
  - Best Available Technology (BAT) Limitations, Option III for Organics and Plastics and Synthetic Fibers, 40 CFS Parts 414 and 416, Proposed Rule.
- Develop mitigative measures to remediate the contaminated saturated soils above the continuous clay layer.

The OU1 interim ROD included a provision to conduct supplemental studies to evaluate methods to enhance the effectiveness of the flushing and/or treatment of contaminated soils. OU2 was created to conduct these supplemental studies required as part of the remedy. An OU2 ROD was issued by EPA on September 27, 2000. Accordingly, this ROD summarizes the efforts under OU2 and describes the selected remedy that was believed to be the final provision of the 1986-ROD for the Syncon Resins Site. The major components of the OU2 remedy were:

- Excavation and drainage of approximately 30,000 cubic yards of contaminated soil from an area of about 2.5 acres;
- Removal and disposal of buried debris and other obstructions from the excavated areas;
- Installation of a drainage layer at the bottom of the excavations;
- Treatment and/or disposal of drained free product from the excavated materials;
- Addition of soil amendments to the excavated soil before backfilling;
- Possible restoration of natural hydraulic conditions, and discontinuation of the CWTS operation; and
- Establishment of institutional controls to ensure continued commercial/industrial use of the property.

The RAOs for the OU2 remedy were:

- Prevent exposure to contaminants in soil at levels exceeding State soil cleanup criteria;
- Improve the effectiveness and efficiency of the existing OU-1 remedy that is currently in place by excavating and draining contaminated soils and by removing debris that is impeding ground water flow. To the extent possible, the draining of the contaminated soils would allow the free and residual product to be removed from the soils, since it is acting as a source of ground water, contamination. It is NJDEP's and EPA's policy to remove or treat continuing sources of contamination (i.e., free or residual product) when technically feasible or practicable;
- Potential restoration of the natural ground water flow at the Site (the slurry wall will be modified to allow ground water to flow from the Site into the river), when it is determined that levels of contaminants in the ground water are below applicable criteria;
- and Provide for restricted (industrial) reuse of the Site.

In January 2004, Louis Berger Group was contracted by NJDEP to prepare a Pre-Design Investigation Report and propose a pilot study and other studies necessary to develop a remedial design to implement the OU2 ROD. The results of the preliminary design investigations

indicated that it would not be feasible to implement the remedy selected in the OU2 ROD because total petroleum hydrocarbons (TPHs), which also contain PCBs, would not drain from the soil.

In May 2006, a building assessment was performed by NJDEP. The structural integrity of 12 buildings was found to be compromised, which would make it unsafe to perform any vibratory or excavation activities within or adjacent to them, and building demolition was recommended. In addition, asbestos-containing material (ACM) and lead-based paint were suspected to be present in the buildings, but the assessment was limited due to the compromised structural integrity of the buildings. A more detailed survey, with appropriate protective measures, was recommended to further investigate the distribution of ACM prior to building demolition activities.

On September 18, 2007, EPA assumed the lead responsibility for Site activities for OU2. On July 14, 2008, a field investigation was conducted which consisted of installing soil borings and conducting soil sampling activities. In 2009, a technical memorandum was prepared to assess regional groundwater flow and groundwater quality in unconsolidated deposits in the vicinity of the Site.

EPA issued an FFS on August 10, 2010 and signed a ROD Amendment for OU2 on September 30, 2010. The major components of this modification of the OU2 Remedy consist of:

- Excavation of soils exceeding Remediation Goals (RGs), to a depth of about 12.5 feet;
- Post-remediation sampling to verify achievement of RGs;
- Treatment and/or disposal of excavated soils at off-site facilities in accordance with applicable regulatory requirements;
- Backfilling of recovered existing gravel from completed excavation areas to the bottom portion of the excavation;
- Backfilling of excavated areas with imported clean fill; and
- Implementation of institutional/engineering controls.

The following RAOs were identified in the OU2 ROD Amendment:

- Reduce or eliminate the direct contact risks associated with contaminated soil to levels protective of a commercial/industrial use;
- Improve the effectiveness and efficiency of the existing OU1 remedy that is currently in place;
- Remove or treat continuing sources of contamination (i.e., Principal Threat Waste) when technically feasible or practicable;
- Address potential future exposure through inhalation of vapors that may migrate from contaminated soils; and
- Provide for restricted (industrial) reuse of the Site.

OU2 - Remedial Construction Activities

Pre-Construction Activities

In September 2010, the EPA and the USACE Kansas City District entered into an Interagency Agreement for development of an RD package. USACE Kansas City District was responsible for the RD, and USACE New York District was responsible for construction activities.

The Notice to Proceed was issued to Sevenson Environmental Services (SES) on June 28, 2016 by the U.S. Army Corps of Engineers (USACE) Kansas City District Contracting Officer. On-site construction activities started on October 3, 2016, and the final inspection for the remedial activities was conducted on October 31, 2018. USACE New York District provided full-time, on-site technical representatives throughout the duration of the project. USACE on-site representatives maintained a direct line of communication with the project management team of SES and EPA's Region 2 Remedial Project Manager (RPM). USACE representatives, in coordination with EPA's RPM, were responsible for assuring the project was executed in accordance with design documents and approved site-specific plans. Weekly project/progress meetings were held at the Site throughout the duration of the field activities.

Following the RA contract award, SES prepared and submitted the required pre-construction work plans to USACE for approval. Pre-construction activities included pre-construction submittals and meetings, permitting, pre-construction videos and photographs, and an initial Site survey. In addition, a structural inspection of existing buildings was performed as a part of pre-construction activities. Local construction permits were coordinated through the Town of Kearny construction offices at the municipal building/town hall. The permits are included in RA Report Appendix B.

Site Preparation

Site preparation activities included the installation of temporary facilities. Temporary water, sanitary, electric, internet, and telephone services were installed.

Existing chain-link fencing and swing gates provided perimeter security. Site security was performed during non-work hours. Security personnel manned the Site between the hours of 4:00 p.m. and 7:00 a.m., Monday through Friday, and 24 hours/day on weekends and holidays.

The following Site preparation activities were conducted: Site clearing and grubbing; soil erosion and sediment control; temporary stockpile containment area construction; clean stone stockpiling; monitoring well abandonment; and installation of office trailers and other temporary support trailers.

Demolition Activities

Decontamination activities were covered by the OU1 ROD but not completed by NJDEP. Therefore, the following activities were conducted to determine if the existing abandoned buildings on Site were safe for workers to conduct inspections and remediation activities: a structural evaluation and assessment of the existing abandoned buildings; pest and rodent

abatement; and an asbestos and lead inspection were conducted for each building. Additionally, an evaluation of whether the buildings would prevent implementation of the OU2 remedy was performed. A building assessment was performed in 2006 and found suspected lead-based paint and asbestos-containing materials (ACM), and determined that the structural integrity of the buildings on-Site to be compromised, making it unsafe to perform any vibratory or excavation activities within or adjacent to the buildings. The buildings were demolished to safely address subsurface contamination.

Asbestos abatement activities were conducted on the abandoned buildings; and a wet demolition method was used for buildings that were determined to be not safe to enter. Demolition activities consisted of the removal of 13 buildings and other features including building slabs, aboveground utilities, aboveground storage tanks, railroad spurs, tank holders, and subsurface components (foundations and footings) that existed within the excavation boundary. After all of the above-ground components of the buildings were demolished, pre-excavation soil sampling was performed to refine the excavation boundaries. Surface and subsurface soil samples were collected in 2-foot vertical intervals, and the results were compared to the surface or subsurface remediation criteria.

Temporary Water Treatment System

A temporary water treatment system (TWTS) was constructed for dewatering excavation areas during soil remediation activities and to treat all contaminated water prior to surface water discharge to the Passaic River, as the existing CWTS was not able to handle the large amount of water at an average flow rate of 150 gallons per minute (gpm). The TWTS was constructed within the existing concrete pad area. The TWTS outfall was located at the existing CWTS outfall location which did not required any upgrades. Extraction of contaminated water from excavation areas for treatment began in batch operations on August 15, 2017. Water was conveyed from dewatering sumps installed in excavation areas. The TWTS operated from June 2017 through May 2018 and treated and discharged a total of 2,533,541 gallons of water.

The TWTS was designed to treat an average flow rate of 150 gallons per minute (gpm) and consisted of the following components: an oil/water separator, two influent equalization tanks, a polymer injection system, a weir/settling tank, a sludge box, bag filters, two greensand filters, an organoclay media filter, two granular activated carbon (GAC) filters, and an effluent/backwash storage tank. An injection point for sodium hypochlorite was installed between the bag filtration and greensand filtration steps, and a sulfuric acid injection point was installed after the GAC units for final pH control, if required.

Excavation Activities

Prior to primary soil excavation activities, the initiation of the installation of sheet piles began on May 31, 2017 and was completed on June 20, 2017. A total of 488 linear feet of sheet piling were installed to protect the existing slurry wall and to provide additional support to an adjacent business along the southern property boundary. Excavation activities began on April 13, 2017 in areas that did not require sheet piling, i.e., not near the slurry wall and or adjacent businesses, and were completed on May 1, 2018. During this activity, unanticipated additional debris and

oversized debris, concrete, wood, and steel cables were encountered in the subsurface excavation areas. The volume of the primary excavation was 43,498 cubic yards of contaminated soils. Details of excavation and sheet piling activities are explained in the RA report.

Demolition and removal from the temporary stockpile containment area and the TWTS area, both located adjacent to the sheet piling, was initiated on March 19, 2018 to allow for excavation of remaining primary excavation areas. All 1½-inch clean stone materials and concrete bin blocks utilized to construct the berms within the temporary containment stockpile area were removed and staged for reuse on-site. The 1½-inch stone was reused for gravel cover; the concrete bin blocks were placed on-site for future reuse.

Secondary excavations were performed when post-excavation confirmation samples exceeded the cleanup criteria. Since the quantities of contaminated soils were underestimated during the RI, several rounds of lateral secondary excavation were required; however, no vertical secondary excavation was required. Secondary excavations were performed in 5-foot increments in lateral depth for the representative 30 linear feet of sidewall represented by the sidewall confirmation sample that exceeded the cleanup criteria. It was also performed where indicated by visual observation of contamination in the two major secondary excavation areas. It was discovered that these areas were part of the hot spots areas that were identified in the OU1 ROD to be excavated by NJDEP but were not fully remediated. The two major secondary excavation areas were located in the TWTS construction area and the area surrounding NJDEP's CWTS. Also, there were two additional excavation areas, that were identified in the late stages of the project and were located within the tank pad area and the temporary facilities compound area. These large secondary excavations were initiated on June 20, 2018 and were completed on October 4, 2018. The total volume of material excavated as part of the secondary excavations was 8,512 cubic yards. See Figure 3.2 from RA report.

Post excavation sampling was conducted to determine whether the commercial/industrial remediation goals were met. Samples were collected every 900 square feet of the floor and every 30 linear feet of sidewall. Post excavation samples were classified as either "confirmation" or "documentation". The purpose of confirmation sampling was to determine that the final excavation limits met the remedial goals. If not, five lateral feet of secondary excavation was performed, and another confirmation sample was collected. Documentation samples were designated where excavation could not be performed any further, e.g., at property boundaries because there was no Site access, at adjacent existing structures, or where excavation depths of 12.5 feet below ground surface were achieved.

Documentation sampling of excavation sidewalls indicates that the majority of soil above remedial goals was removed. Within the site boundary, a limited number of samples exceed RGs adjacent to existing structures (GWTS, concrete slabs, subsurface slurry wall). No documentation samples were collected on the southern property boundary because soils were excavated to the steel sheet piling on the property boundary that supports the Spectraserve property parking lot. Spectraserv is currently a wastewater treatment plant sludge processing and transfer facility, but also processed waste oils under a RCRA permit in the past. On the north side of the property, adjacent to Clean Earth, several samples also exceeded RGs. Clean Earth is

a hazardous waste facility that treats and processes soils, bulk liquids and solids and drums. It is anticipated that no further excavation activities will occur in these areas.

Transportation and disposal activities began on January 13, 2017 and were completed on October 17, 2018. Waste profiles for each waste stream were completed based on the results of the waste characterization, submitted to USACE for approval, and provided to the disposal facility for acceptance prior to shipment of material. Waste manifests and certificates of treatment for all contaminated material sent for off-site disposal are included in Appendix M of the RA report.

The total volume of material excavated was 52,010 CY, as compared to the ROD estimated of 30,000 CY. The final excavation boundaries and post-excavation sample locations are also shown on Figure 3-2.

Backfilling was initiated on July 19, 2017 and completed on October 8, 2018. Approximately 49,550 CY of common backfill materials were used at the Site during RA activities, requiring 10 backfill samples to be collected for chemical and radiological testing.

Institutional Controls

The ROD required implementation of institutional/engineering controls to ensure continued commercial/industrial use of the property. A deed notice will be placed on the Site to identify the likely presence of residual contamination to ensure that future intrusive subsurface activities are properly performed. Based on the results of additional groundwater monitoring, a deed notice might also require mitigation measures to prevent vapor intrusion to any buildings to be constructed in the future. Since this remedy will result in contaminants remaining on the Site above levels which allow for unrestricted use and unlimited exposure, a review of the remedy will be conducted no less than every five years pursuant to Section 121(c) of CERCLA.

III. DEMONSTRATION OF CLEANUP ACTIVITY QUALITY ASSURANCE AND QUALITY CONTROL

RA activities at the Site were undertaken in a manner consistent with the ROD amendment, the RD plans and specifications, and Site drawings. All applicable EPA and State quality assurance and quality control (QA/QC) procedures and protocols to be followed by construction contractors were specified in the RD. Appropriate EPA analytical methods were used for all soil sample collection and analyses during all RA activities; the sample analyses were performed at certified laboratories. Oversight of daily construction activities was provided for by the USACE. In addition, EPA and NJDEP personnel regularly visited the Site.

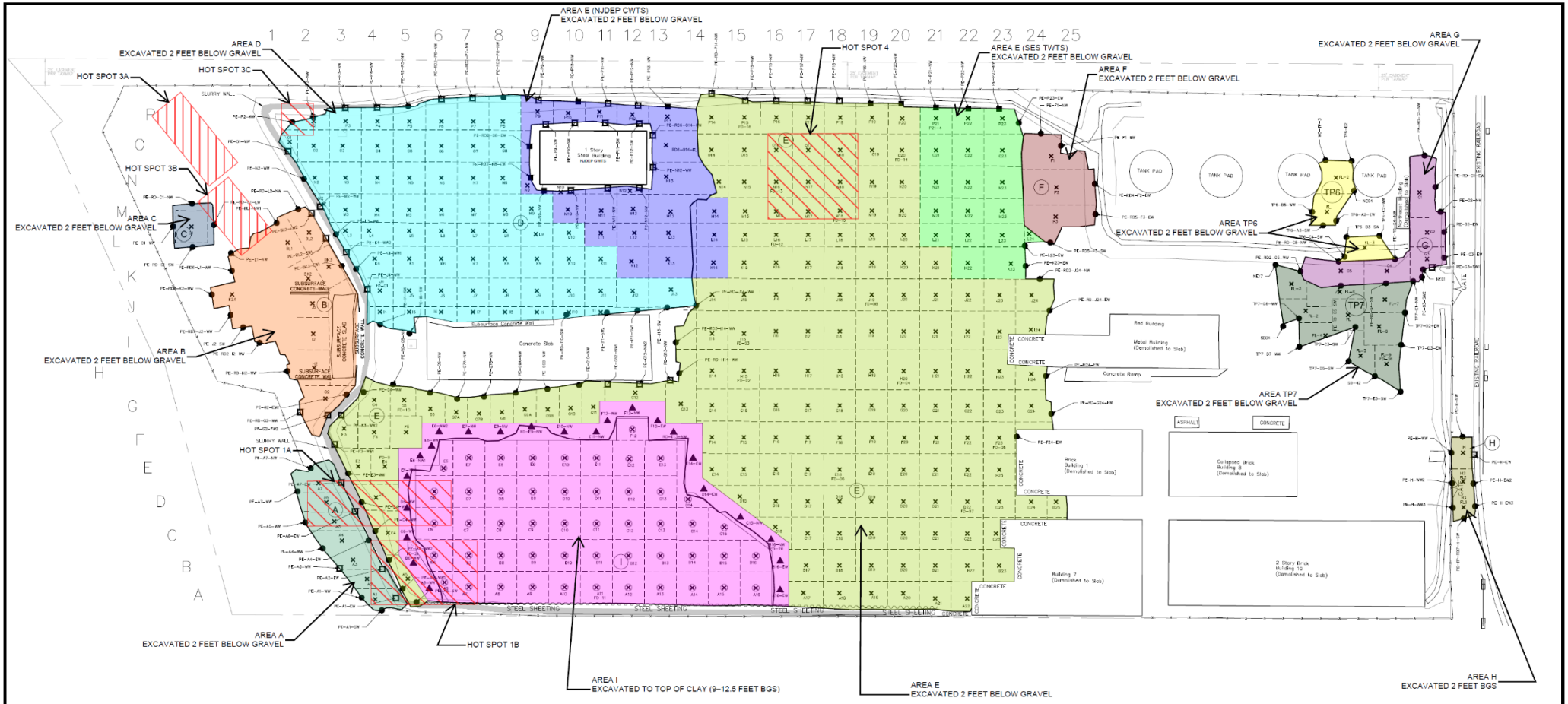
The QA/QC program used throughout the soil RA was rigorous and in conformance with EPA and State standards; therefore, EPA and the State determined that all analytical results were accurate to the degree needed to assure satisfactory execution of the RAs, and that they were consistent with the ROD and RD plans and specifications, as modified by the as-built drawings.

IV. ACTIVITIES AND SCHEDULE FOR SITE COMPLETION

The following activities remain for the Site:

Task	Estimated Completion	Responsible Organization
Classification Exception Area	September 2021	EPA/NJDEP
Five-Year Review -	September 2021	EPA
Approve Final Close-Out Report	To Be Determined	EPA
Deletion from the NPL	To Be Determined	EPA

Please note that the above activities and dates are only estimates and subject to change. Additional FYRs may be required.



LEGEND:

- × POST–EXCAVATION BOTTOM CONFIRMATION SAMPLE (PCBs)
- ⊗ POST–EXCAVATION BOTTOM DOCUMENTATION SAMPLE (PCBs)
- ● POST–EXCAVATION SIDEWALL CONFIRMATION SAMPLE, DOES NOT EXCEED RGs (SURFACE COCs)
- ▲ POST–EXCAVATION SIDEWALL CONFIRMATION SAMPLE, DOES NOT EXCEED RGs (PCBs)
- ■ POST–EXCAVATION SIDEWALL DOCUMENTATION SAMPLE, DOES NOT EXCEED RGs (SURFACE COCs)
- □ POST–EXCAVATION SIDEWALL DOCUMENTATION SAMPLE, EXCEEDS RGs (SURFACE COCs)
- OU1 REMEDIATED HOT SPOT

NOTES:

1. THE COLOR-SHADED AREAS INDICATE THE FINAL EXCAVATION LIMITS OF EACH EXCAVATION AREA, INCLUDING PRIMARY AND SECONDARY EXCAVATION.
2. THE HOT SPOTS INDICATED WERE REMEDIATED IN 1991 AS A COMPONENT OF DURING THE OU1 REMEDIAL ACTION.
3. DOCUMENTATION SAMPLES WERE COLLECTED IN LOCATIONS WHERE NO FURTHER SECONDARY EXCAVATION COULD BE PERFORMED.

ABBREVIATIONS:

BGS - BELOW GROUND SURFAACE
COC - CONTAMINANT OF CONCERN
CWTS - CONTAMINATED WATER TREATMENT SYSTEM (OU1)
NJDEP - NEW JERSEY DEPATMENT OF ENVIRONMENTAL PROTECTION
OU - OPERABLE UNIT
PCB - POLYCHLORINATED BIPHENYL
RG - REMEDIATION GOAL
SES - SEVENSON ENVIRONMENTAL SERVICES
TWTS - TEMPORARY WATER TREATMENT SYSTEM

CDM Smith

Figure 3-2
Post-Excavation Sample Locations
Remedial Action Report
Syncon Resins Superfund Site OU2
Kearny, New Jersey